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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,014	12/06/2004	Helmut Bacher	080634-000000US	2765

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EXAMINER
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EWALD, MARIA VERONICA

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/517,014	BACHER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Maria Veronica D. Ewald	1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12/6/04</u> .   | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Claim Objections***

13. Claim 1 is objected to because of the following informalities: Halfway through the claim 1, it is stated "...which opening is disposed at a higher level then the highermost tools circulating within this receptacle..." The word "then" should be corrected to "than."

### ***Claim Rejections - 35 USC § 112***

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 recites the limitation "the mixing cone" in the third line. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1 – 9 and 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bacher, et al. (U.S. 5,536,154) in view of Teeny (U.S. 5,110,055). Bacher teaches an apparatus for processing thermoplastic synthetic material that has to be recycled, comprising a first (item 1 – figure 1; item 1 – figure 2) and a second receptacle (item 13 – figures 1 and 2) for the material to be processed, in which receptacles tools circulating around vertical axes are provided for mixing and heating the material, wherein at least two tools each circulate in different levels one above the other (figures 1 and 2; column 3, lines 45 – 50; column 6, lines 13 – 15), and the material reaches the second receptacle that is connected to an evacuating means from the second receptacle through a connecting conduit (item 12 – figures 1 and 2; column 4, lines 25 – 30), and wherein the first receptacle has above an intake opening for the material to be processed, which opening is disposed at a higher level than the highest tools circulating within this receptacle (item 2 – figure 1; item 12 – figure 2) and a discharge opening of the second receptacle is disposed at least substantially at the level of the lowest tools circulating in this receptacle (item 12 – figures 1 and 2), and the mouth of the connecting conduit in the second receptacle is disposed at a higher level than the tools circulating in this receptacle (items 12 and 14 – figures 1 and 2; column 6, lines 49 – 50), and wherein the processed material is carried off the second receptacle whereby this receptacle is vacuum-tightly closed, through the discharge opening by means of at least one screw which constitutes a member of an extruder, whereby the screw is a double screw extruder (item 16 – figure 1; column 1, lines 54 – 55; column 4, lines 19 – 24, 27 – 30; column 6, lines 9 – 10), and the first

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receptacle is also connected to an evacuating means (figure 2), characterized in that to the intake opening of the first receptacle a sluice is connected, wherein the sluice is a vacuum sluice (item 24 – figure 2; column 4, lines 59 – 65) and that in both receptacles the tools are mounted on disc-shaped tool carriers disposed one above the other wherein at least one of the tool carriers has a disc edge upwardly bent like a plate (column 3, lines 50 – 60). Furthermore, the evacuating means is equipped for creating different vacuum conditions in the two receptacles, wherein the evacuating means comprises at least one vacuum pump and there is a control means for the vacuum within the respective receptacle connected to each one of the receptacles, which control means adjustably controls the vacuum in the respective receptacle (column 4, lines 25 – 35; column 5, lines 49 – 55; column 6, lines 45 – 50).

Bacher, et al., however, do not teach that there is a temperature sensor provided for each level and a dust collector attached to the evacuation means.

In a method to clean and mix thermoplastic material for reuse in the manufacture of molded plastic products, Teeny teaches the use of two receptacles and a cyclone separator (figure 1). Within each receptacle, thermoplastic material is continually agitated and heated using a pair of replaceable blades mounted on a hub and six stator blades positioned directly above the replaceable blades to keep the movement of plastic pieces continually changing (column 5, lines 7 – 10, 33 – 35). To determine the temperature of the plastic mass, there is a thermocouple (item 87 – figure 2) positioned above the stator blade (column 5, line 52 – 55). The thermocouple is used such that when the temperature of the materials has increased to a predetermined temperature, a

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small amount of water is delivered into the receptacle (column 8, lines 5 – 25). The addition of water causes the paper labels on the plastic pieces to expand and allow them to be beaten to a fluffy consistency (column 8, lines 28 – 32). Furthermore, there is a dust separator connected to the evacuation means for the collection of the pieces of paper label and adhesive materials, thereby removing the vast majority of the contaminants from the plastic (column 8, lines 35 – 40). This reads on the Applicant's claims that there is at least one temperature sensor provided for each level of the circulating tools and such sensors are connected to means for controlling circulation of the tools, and are disposed within the receptacle at least substantially at a level that is in the region in which the mixing cone leaves the sidewall of the receptacle and further reads on the Applicant's claim that each one of the evacuating means comprises a dust separator.

It would have been obvious at the time of the Applicant's invention to modify the apparatus of Bacher, et al. to include the temperature sensor and dust collector of Teeny for the purpose of monitoring the temperature of the plastic material such that water is then added to the mixture to remove any particulate matter such as adhesives or paper labels from the plastic which are subsequently evacuated to the dust separator, which serves to remove any contaminant material from the plastic prior to any molding or further processing as taught by Teeny (column 8, lines 5 – 10, 28 – 40).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bacher, et al. in view of Teeny, and further in view of Maris (U.S. 6,422,732). Bacher, et al. and

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Teeny teach the characteristics previously described but do not teach that there is a degassing opening, preferably a vacuum pump connected to the housing of the screw.

In a method to extract undesirable matter from an extruder, Maris teaches the use of an extruder in which its housing is connected to a chamber and a vacuum pump (column 2, lines 38 – 42). During operation of the extruder, thermoplastic material is pushed by rotation of the extruder screws; volatile components are generated during this process and are evacuated as a result of the extraction action of the vacuum pump (column 2, lines 45 – 47).

It would have been obvious at the time of the Applicant's invention to modify the apparatus of Bacher, et al. to include the temperature sensor and dust collector of Teeny, further modified with the vacuum pump and chamber of Maris for the purpose of removing any volatile material, gas or liquid which may build up as a result of the processing of the thermoplastic material by the extruder screw as taught by Maris (column 2, lines 45 – 47).

### ***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MVE

Joseph S. Del Sole  
1/12/06  
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